

Application Serial No.: 10/723,944

## REMARKS

Claims 1 through 26 are in the application, with Claims 1 through 4, 8 through 12, 14 through 21, and 23 through 26 having been amended. Claims 1, 9 and 18 are the independent claims herein. No new matter has been added. Reconsideration and further examination are respectfully requested.

Applicants again thank the Examiner for indicating that Claims 2 through 5, 8, 11 through 14, 17, 20 through 23 and 26 would be allowable if rewritten in independent form. Applicants reserve the right to amend these claims in this manner in a future response.

Claims 1, 6, 7, 9, 10, 15, 16, 18, 19, 24 and 25 were rejected as allegedly being anticipated by U.S. Patent No. 5,821,694 (hereinafter "Young"). Reconsideration and withdrawal of the rejection are respectfully requested.

## Claim 1

Amended independent Claim 1 relates to an apparatus including an accelerator waveguide and a detuning device. The accelerator waveguide includes an end accelerating cavity to output first particles from the end accelerating cavity at a first energy in a first mode and to output second particles from the end accelerating cavity at a second energy in a second mode. The detuning device is coupled to the end accelerating cavity and is to selectively detune the end accelerating cavity.

Young is not seen to disclose or to suggest the foregoing features of amended independent Claim 1. More particularly, Young is not seen to disclose or to suggest at least a detuning device coupled to an end accelerating cavity of an accelerator waveguide and to selectively detune the end accelerating cavity.

Rather, Young describes a system to vary an output energy of an accelerator beam by detuning coupling cavity 22. Although coupling cavity 22 is located at one end of accelerator structure 10, coupling cavity 22 is clearly not an end accelerating cavity as claimed in Claim 1. More particularly, coupling cavity 22 is not an "accelerating cavity" (such as cavities 20 and 24 of Young), nor does accelerator structure 10 "output first particles from" coupling cavity 22. Accordingly, any detuning of coupling cavity 22 cannot be seen to disclose or to suggest detuning of an end accelerating cavity as claimed in Claim 1.

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Amended independent Claim 1 and its associated dependent claims are therefore believed to be allowable and withdrawal of the rejection thereof is respectfully requested.

**Claims 9 and 18**

Independent Claim 9 concerns a method that includes operating an accelerator waveguide to output first particles from a tuned end accelerating cavity of the accelerator waveguide at a first energy, detuning the end accelerating cavity, and operating the accelerator waveguide to output second particles from the detuned end accelerating cavity at a second energy.

The art of record is not seen to disclose or suggest the foregoing features. Young, in particular, makes no mention of tuning or detuning an end accelerating cavity of an accelerator waveguide. As mentioned above, Young describes detuning coupling cavity 22, which neither outputs particles nor can be considered an accelerating cavity. In fact, Young itself clearly distinguishes coupling cavity 22 from its own accelerating cavities 20 and 24.

Claim 9 and its associated dependent claims are believed to be allowable. Independent Claim 18 relates to a medium storing process steps roughly corresponding to the method of Claim 9. Accordingly, Claim 18 and its dependent claims are also believed to be allowable. Reconsideration and withdrawal of the rejections of these claims is respectfully requested.

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**C O N C L U S I O N**

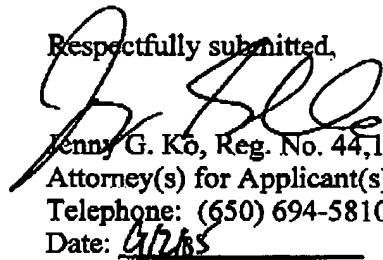
The outstanding Office Action presents a number of characterizations regarding the applied reference, some of which are not directly addressed herein because they are not related to the rejections of the independent claims. Applicants do not necessarily agree with the characterizations and reserves the right to further discuss those characterizations.

For at least the reasons given above, it is submitted that the entire application is in condition for allowance and such action is respectfully requested at the Examiner's earliest convenience. Alternatively, if there remains any question regarding the present application or any of the cited references, or if the Examiner has any further suggestions for expediting allowance of the present application, the Examiner is cordially requested to contact the undersigned.

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Respectfully submitted,



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